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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,687	09/16/2003	Cary R. Bybee	200207269	4097

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

DICHT, RACHEL S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.D

Office Action Summary	Application No.	Applicant(s)	
	10/664,687	BYBEE ET AL.	
	Examiner	Art Unit	
	Rachel Dicht	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) 9-16, 18-29, 47-57, 60 and 66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17, 30-46, 58, 59, 61-65, 67 and 68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/16/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 9-16, 18-29, 47-57, 60 and 68 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 27 May 2005.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 considered to be circular: "An ink delivery apparatus comprising a chamber configured to contain ink, said chamber having: a proximal end for connection to said ink delivery apparatus"

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 3, 4, 8, 17, 35, 38, 39, 40, 43, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark et al. (US Pat. No. 5,734,401).

In regard to:

Claim 1:

Clark et al. teaches an ink delivery apparatus (10, Fig. 1) comprising a chamber (12 and 14, Fig. 2) configured to contain ink, said chamber having a proximal end (90 and 92, Fig. 3) for connection to said ink delivery apparatus, and opposing side portions (left and right side portions of Fig 6) having at least one tapered section (left and right side portions of Fig. 6) configured to support said chamber and to facilitate at least partial controlled collapse of said chamber in response to a negative pressure (refer to column 5 lines 54-57).

Claim 2:

Clark et al. teaches an ink delivery apparatus (10, Fig. 1) wherein said chamber (12 and 14, Fig. 2) further comprises a distal end opposite said proximal end, said distal end being rounded (sides of casing 12, Figs. 2, 3, 5, and 6).

Claim 3:

Clark et al. teaches an ink delivery apparatus further comprising at least one tapered section defined in each of said opposing side portions (refer to left and right side portions of Fig. 6).

Claim 4:

Clark et al. teaches an ink delivery apparatus wherein each opposing side portion comprises a central portion with thickness of said side portion decreasing to either side of said central portion (refer to left and right side portions of Fig. 6).

Claim 8:

Clark et al. teaches an ink delivery apparatus further comprising a fitment (22, Fig. 2) coupled to said proximal end (90 and 92, Fig. 2) of said chamber (refer to column 3 lines 31-34).

Claim 17:

Clark et al. teaches on ink delivery assembly comprising, at least one pressure tuned ink chamber (14, Fig. 2) having a proximal end (90 and 92, Fig. 2) and a distal end (sides of casing 12, Figs. 2, 3, 5, and 6), a first pair of opposing side portions disposed at least partially between said proximal and distal ends, said first pair of opposing side portions having opposing tapered sections (left and right side portions of Fig. 6), a second pair of opposing side portions at least partially between said proximal and distal ends, said second pair of opposing side portions having opposing rounded sections (top and bottom portions of Fig. 6), and a fitment (22, Fig. 2) coupled to said chamber.

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Claim 35:

Clark et al. teaches a print device comprising at least one pressure tuned ink chamber (14, Fig. 2) having a proximal end (90 and 92, Fig. 2) and a distal end (sides of casing 12, Figs. 2, 3, 5, and 6), a first pair of opposing side portions disposed at least partially between said proximal and distal ends, said first pair of opposing side portions having at least one pair of opposing tapered sections (left and right side portions of Fig. 6), a second pair of opposing side portions disposed at least partially between said proximal and distal ends, said second pair of opposing side portions having opposing rounded sections (top and bottom portions of Fig. 6), and a fitment (22, Fig. 2) coupled with said chamber having fluid interconnect (36, Fig. 2), and a print head coupled to said fitment (refer to column 7 lines 1-3).

Claim 38:

This claim is rejected on the basis set forth for claim 4 as discussed above.

Claim 39 and 40:

This claim is rejected on the basis set forth for claim 30 and 31 as discussed above.

Claim 43:

Clark et al. teaches a device wherein said fluid interconnect (22, Fig. 2) is configured to fluidly couple a print head and said chamber (14, Fig. 2), and further comprising a second fluid interconnect (16, Fig. 2), said second fluid interconnect being configured to fluidly couple an ink supply and said chamber (refer to column 3 lines 46-52).

Claim 46:

This claim is rejected on the basis set forth for claim 34 as discussed above.

6. Claims 58, 59, 64 and 67 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunn et al. (US Pat. No. 5,153,612).

In regard to:

Claim 58:

Dunn et al. teaches a method of delivering liquid ink, comprising: providing at least one pressure tuned ink chamber (22 and 24, Fig. 1) containing an ink; establishing a negative pressure in said chamber (refer to column 5 lines 30-32); supplying said ink (60 and 58, Fig. 2) to a print head (26, Fig. 2); regulating a level of said negative pressure within a pre-determined range while at least partially resiliently collapsing a portion of said chamber in response to said negative pressure (refer to column 5 lines 62-66).

Claim 59:

Dunn et al. teaches a method wherein said regulating negative pressure comprises substantially resiliently collapsing said chamber over said pre-determined range of said negative pressure (refer to column 6 lines 5-13).

Claim 64:

Dunn et al. teaches a system for delivering and ink supply, comprising: supply means (58 and 60, Fig. 2) for supplying at least one ink to a print head (26, Fig. 2); means for establishing a negative pressure (refer to column 5 lines 33-38) in said supply means, and means for at least partially resiliently collapsing (24, Fig. 2) said supply means in order to regulate said negative pressure within a pre-determined range (refer to column 5 lines 11-16 and lines 20-38).

Claim 67:

Dunn et al. teaches a system wherein said supply means comprises a collapsible, pressure tuned ink chamber (24, Fig. 2) (refer to column 5 lines 11-16).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being obvious over Clark et al. (US Pat. No. 5,734,401) in view of Pawlowski, Jr. (US Pat. No. 5,646,664).

In regard to:

Claim 5:

The device of Clark et al. DIFFERS from claim 5 in that it fails to teach an ink delivery apparatus further comprising rounded side portions at ends of said opposing side portions.

However, Pawlowski, Jr. teaches an ink delivery apparatus further comprising rounded side portions at ends of said opposing side portions (refer to Fig. 2).

Claim 6:

The device of Clark et al. DIFFERS from claim 6 in that it fails to teach a chamber comprising an elastomeric material.

However, Pawlowski, Jr. teaches a chamber comprising an elastomeric material (refer to column 2 lines 14-17).

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Claim 7:

The device of Clark et al DIFFERES from claim 7 in that it fails to teach a chamber comprising a EDPM/Butyl material.

However, Clark et al. in view of Pawlowski, Jr. discloses the claimed invention except for the material the ink chamber is made of. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the chamber to be made of EDPM/Butyl, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of it's suitability for the intended use for the purpose of having a flexible ink chamber that is partially collapsible. *In re Leshin*, 125 USPQ 416.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Clark et al. to incorporate rounded side portions as taught by Pawlowski, Jr. for the purpose of providing sturdy outer shell.

9. Claims 30, 31, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (US Pat. No. 5,734,401).

In regard to:

Claim 30 and 31:

Incorporating all arguments of claim 17 above, it is noted that Clark et al. fails to teach the ink delivery assembly further comprising a plurality of pressure tuned ink chambers.

However, Clark et al. discloses the claimed invention except for the plurality of pressure tuned ink chambers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include more than one ink chamber for multi-color printing, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claim 33:

Clark et al. teaches an ink delivery assembly further comprising a sealing gasket (32, Fig. 2) disposed at least partially between said plurality of chamber and said fitment (22, Fig. 2) (refer to column 3 lines 50-51).

Claim 34:

Clark et al. teaches an ink delivery assembly wherein said fitment (22, Fig. 2) is configured to be coupled to a print head (refer to column 7 lines 1-3).

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10. Claims 32, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (US Pat. No. 5,734,401) in view of Ikkatai et al. (US Pat. No. 6,276,784).

In regard to:

Claims 32 and 41:

The device of Clark et al. DIFFERS from claim 32 in that it fails to teach an assembly wherein said plurality of pressure tuned ink chambers comprises a plurality of ink colors, each color being separately contained within one of said plurality of chambers.

However, Ikkatai et al. teaches an assembly wherein said plurality of pressure tuned ink chambers (3, Fig. 2) comprises a plurality of ink colors, each color being separately contained within one of said plurality of chambers (refer to column 4 lines 40-44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Clark et al. to incorporate a plurality of pressure tuned ink chambers comprising a plurality of colors as taught by Ikkatai et al. for the purpose of multicolor printing.

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Claim 42:

This claim is rejected on the basis set forth for claim 33 as discusses above.

11. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (US Pat. No. 5,734,401) in view of Dunn et al. (US Pat. No. 5,153,612).

In regard to:

Claim 36:

The device of Clark et al. DIFFERS from claim 36 in that it fails to teach a print device further comprising a bubble generator in said fitment, wherein said bubble generator is configured to provide a substantially constant pressure equivalent to about 5" of water column.

However, Dunn et al. teaches a print device further comprising a bubble generator (70, Fig. 2) in said fitment (28, Fig. 2), wherein said bubble generator is configured to provide a substantially constant pressure equivalent to about 5" of water column (refer to column 5 line 48-50 and column 6 lines 11-13).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Clark et al. to

incorporate a bubble generator as taught by Dunn et al. for the purpose of regulating the back pressure in the chamber to allow the ink to flow more freely.

Claim 37:

The device of Clark et al. DIFFERS from claim 37 in that it fails to teach a print device configured to at least partially collapse in response to a negative pressure to maintain said negative pressure within a determined range, wherein said range is substantially equivalent to pressures of between about 2" to 5" inches of water column.

However, Dunn et al. teaches a print device configured to at least partially collapse in response to a negative pressure to maintain said negative pressure within a determined range (refer to column 5 lines 55-57 and lines 62-68), wherein said range is substantially equivalent to pressures of between about 2" to 5" inches of water column (refer to column 5 lines 48-50 and column 6 lines 11-13).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Clark et al. to have a chamber configured to at least partially collapse in response to a negative pressure as taught by Dunn et al. for the purpose of preventing ink from permeating through the print head when the pen is inactive.

12. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (US Pat. No. 5,734,401) in view of Ikkatai et al (US Pat. No. 6,276,784).

The device of Clark et al. DIFFERS from claim 44 in that it fails to teach a device wherein said chamber comprises an off-axis ink supply.

However, Ikkatai et al. teaches a device wherein said chamber (3, Fig. 1) comprises an off-axis ink supply (2, Fig 1) (refer to column 4 lines 40-47).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Clark et al. to incorporate an off-axis ink supply as taught by Ikkatai et al. for the purpose of supplying a larger capacity of ink to the print head.

13. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (US Pat. No. 5,734,401) in view of Scheffelin et al. (US Pat. No. 5,745,137).

The device of Clark et al. DIFFERS from claim 45 in that it fails to teach a device wherein said chamber comprises an on-axis ink supply.

However, Scheffelin et al. teaches a device wherein said chamber (10 and 25, Fig. 1) comprises an on-axis ink supply (238, Fig. 9; 1101A, Fig. 11) (refer to column 7 lines 40-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Clark et al. to incorporate an on-axis ink supply as taught by Scheffelin et al. for the purpose of ensuring more accurate printing caused by a lack of vibrations.

14. Claims 61, 62, 63, 65 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al. (US Pat. No. 5,153,612) in view of Clark et al. (US Pat. No. 5,734,401).

In regard to:

Claim 61:

The device of Dunn et al. DIFFERS from claim 61 in that it fails to teach a method of delivering liquid ink further comprising monitoring a level of ink in said chamber.

However, Clark et al. teaches a method of delivering liquid ink further comprising monitoring a level of ink in said chamber (refer to column 8 lines 51-53).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Dunn et al. to include a monitory system as taught by Clark et al. for the purpose of extending the life of the print head by preventing "dry" firing of the ink jets.

Claim 62:

The device of Dunn et al. DIFFERS from claim 62 in that it fails to teach a method of delivering liquid ink further providing notification of a substantial increase in said negative pressure.

However, the Clark et al. teaches a method of delivering liquid ink further providing notification of a substantial increase in said negative pressure (refer to column 8 lines 45-53).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a notification system as taught by Clark et al. for the purpose of extending the life of the print head by preventing "dry" firing of the ink jets.

Claim 63:

Dunn et al. discloses the claimed invention except for a method of delivering ink providing a plurality of said pressure tuned ink supply chambers. It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to modify the device of Dunn et al. to include a plurality of pressure tuned ink supply chambers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claim 65:

The device of Dunn et al. DIFFERS from claim 65 in that it fails to teach a system further comprising means for monitoring a level of said negative pressure.

However, Clark et al. teaches a system comprising means for monitoring (30, Fig. 3) a level of said negative pressure (refer to column 8 lines 51-53).

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Dunn et al. to include a monitoring system to monitor the level of negative pressure as taught by Clark et al. for the purpose of extending the life of the print head.

Claim 68:

The device of Dunn et al. DIFFERS from claim 68 in that it fails to teach a system wherein said means for at least partially resiliently collapsing said supply means comprise opposing tapered side portions of said ink chamber, wherein

said opposing tapered side portions each have a central portion with thickness of said side portions decreasing to either side of said central portion.

However, Clark et al. teaches a system wherein said means for at least partially resiliently collapsing said supply means (14, Fig. 2) comprise opposing tapered side portions (left and right side portions of Fig. 6) of said ink chamber, wherein said opposing tapered side portions each have a central portion with thickness of said side portions decreasing to either side of said central portion (left and right side portions of Fig. 6).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Dunn et al. to incorporate opposing tapered side portions as taught by Clark et al. for the purpose of protecting the partially collapsible supply means.

Contact Information

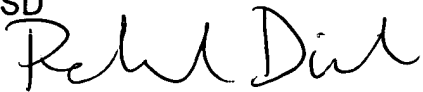
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel Dicht whose telephone number is 571-272-8544. The examiner can normally be reached on 7:00 am - 3:30 pm Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RSD



July 11, 2005



7/20/05
MANISH S. SHAH
PRIMARY EXAMINER